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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,123	12/01/2004	Junkei Sato	SC12147JS	4296

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EXAMINER

BIRKHIMER, CHRISTOPHER D

ART UNIT PAPER NUMBER

2198

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/517,123		SATO ET AL.	
	Examiner		Art Unit	
	Christopher D. Birkhimer		2198	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01 December 2004</u> . | 6) <input checked="" type="checkbox"/> Other: <u>PTO-1472</u> . |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: On page 7 line 4, numeral 10 references the CPU. According to Figure 1, numeral 100 should reference the CPU. Appropriate correction is required.

Priority

2. It is noted that this application appears to claim subject matter disclosed in prior Application No. JP 2002-160990, filed 3 June 2002. A reference to the prior application must be inserted as the first sentence(s) of the specification of this application or in an application data sheet (37 CFR 1.76), if applicant intends to rely on the filing date of the prior application under 35 U.S.C. 119(e), 120, 121, or 365(c). See 37 CFR 1.78(a). For benefit claims under 35 U.S.C. 120, 121, or 365(c), the reference must include the relationship (i.e., continuation, divisional, or continuation-in-part) of all nonprovisional applications. If the application is a utility or plant application filed under 35 U.S.C. 111(a) on or after November 29, 2000, the specific reference to the prior application must be submitted during the pendency of the application and within the later of four months from the actual filing date of the application or sixteen months from the filing date of the prior application. If the application is a utility or plant application which entered the national stage from an international application filed on or after November 29, 2000, after compliance with 35 U.S.C. 371, the specific reference must be submitted

during the pendency of the application and within the later of four months from the date on which the national stage commenced under 35 U.S.C. 371(b) or (f) or sixteen months from the filing date of the prior application. See 37 CFR 1.78(a)(2)(ii) and (a)(5)(ii). This time period is not extendable and a failure to submit the reference required by 35 U.S.C. 119(e) and/or 120, where applicable, within this time period is considered a waiver of any benefit of such prior application(s) under 35 U.S.C. 119(e), 120, 121 and 365(c). A benefit claim filed after the required time period may be accepted if it is accompanied by a grantable petition to accept an unintentionally delayed benefit claim under 35 U.S.C. 119(e), 120, 121 and 365(c). The petition must be accompanied by (1) the reference required by 35 U.S.C. 120 or 119(e) and 37 CFR 1.78(a)(2) or (a)(5) to the prior application (unless previously submitted), (2) a surcharge under 37 CFR 1.17(t), and (3) a statement that the entire delay between the date the claim was due under 37 CFR 1.78(a)(2) or (a)(5) and the date the claim was filed was unintentional. The Director may require additional information where there is a question whether the delay was unintentional. The petition should be addressed to: Mail Stop Petition, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

If the reference to the prior application was previously submitted within the time period set forth in 37 CFR 1.78(a), but not in the first sentence(s) of the specification or an application data sheet (ADS) as required by 37 CFR 1.78(a) (e.g., if the reference was submitted in an oath or declaration or the application transmittal letter), and the information concerning the benefit claim was recognized by the Office as shown by its inclusion on the first filing receipt, the petition under 37 CFR 1.78(a) and the surcharge

under 37 CFR 1.17(t) are not required. Applicant is still required to submit the reference in compliance with 37 CFR 1.78(a) by filing an amendment to the first sentence(s) of the specification or an ADS. See MPEP § 201.11.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims **1 - 7** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Lines 1 and 2 of **claim 1** state "having a nonvolatile memory and a volatile memory that store control data for a controlling device". It is unclear if both the nonvolatile and the volatile memory store the control data or just the volatile memory stores the control data.

6. **Claim 2** recites the limitation "the data in the nonvolatile memory" in lines 1 - 2. There is insufficient antecedent basis for this limitation in the claim. It is unclear from claim 1 if the nonvolatile memory has any data in it and it is also unclear if applicant is referring to the control data or another type of data.

7. **Claim 3** states the controller "preferentially executes data processing for the volatile memory during the calibration". However, preference to data execution is not mentioned in the specification. It is unclear what the applicant is trying to claim by using the term "preferentially".

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8. **Claim 4** recites the limitation "the address" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 1-3, and 6 - 7** are rejected under 35 U.S.C. 102(e) as being anticipated by James W. Allen (US Pat 6,505,105).

Considering **claim 1**, Allen teaches an electronic control apparatus having a nonvolatile memory and a volatile memory that stores control data (*calibration tables*) for controlling a device (*control a subsystem*), the electronic control apparatus comprising: **[Abstract; column 2, line 47 - 48]**.

A controller (microcontroller) that uses data stored in the volatile memory to perform calibration of the control data

and performs a write of the data stored in the volatile memory into the nonvolatile memory, when the calibration is completed. **[Column 2, lines 55 – 67; and column 3, lines 1 - 8]**.

Considering **claim 2**, Allen teaches that the controller stores the data in the nonvolatile memory to be calibrated into the volatile memory, when the calibration is started (*loads calibration table into volatile memory*) [**Column 2, lines 57 - 61**].

And uses the data stored in the volatile memory to perform calibration of the control data (*replaces calibration constant in volatile memory*) [**Column 2, lines 61 - 67**].

Considering **claim 3**, Allen teaches an electronic control apparatus wherein the controller:

identifies an address of the nonvolatile memory to be calibrated when the calibration is started (*selects calibration table in nonvolatile memory*); [**Column 2 lines 57-59**].

assigns the same address as that of the nonvolatile memory to the volatile memory (*memory overlay*); [**Claim 3**].

executes data processing for the volatile memory during the calibration (*replaces calibration constant in volatile memory*) [**Column 2 lines 61 - 64**].

Considering **claim 6**, Allen teaches an electronic control apparatus wherein:
The device includes a plurality of units (engine); [**Column 4 line 19-21**]. An engine is a device that is made up of multiple units, such as, pistons, valves, switches, etc.
Therefor, the control data corresponds to each of the constituent units of the engine.

Also, not that the nonvolatile memory bank contains a plurality of calibration tables. Each of the calibration tables are suggested to correspond to a subsystem.
[**Column 4, Lines 17-41**].

The volatile memory has a storage capacity capable of storing control data corresponding to the unit to be calibrated. **[Column 2, lines 57 – 64]**. Since calibration data is loaded into the volatile memory, the volatile memory inherently has to have enough memory to store the calibration data even though it is not expressly stated.

Considering **claim 7**, Allen teaches an electronic control apparatus wherein:

The nonvolatile memory includes at least two or more storage blocks(*dual-bank*); **[Column 4, lines 25 - 27]**.

The write is executed for each storage block; and when a write into one of the storage blocks is executed, another storage block is used to control the device. **[Column 4, lines 40-41]**. The write is performed on both banks of memory of the nonvolatile memory since Allen states the calibration constants are stored in the nonvolatile memory as a single unit and doesn't refer to each bank of the memory **[Column 4, lines 38 - 41]**.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

13. Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over James W. Allen (US Pat 6,505,105) in view of Roohparvar (US Patent Application Pub. No.: 2002/0126561 A1).

Allen teaches an electronic control unit that contains a volatile and a nonvolatile memory for calibration of data to control a subsystem. **[Abstract].**

However, Allen does not specifically disclose the a control register for controlling data in the nonvolatile memory and to store the data that was calibrated and the address of the data calibrated.

Roohpavar discloses the use of an address register (112) and a data registers (128 and 126), which would be equivalent to the control register in Allen's teaching.

[Fig 1].

It would have been obvious to a person of ordinary skill in the art at the time the invention to use an address and data register in the device of the Allen in order to hold the data until the memory devices that need the data are fully powered up so the data and address information isn't transferred to a memory device that isn't powered up and the information lost, because Roohparvar shows there is a need in the art to verify power levels at the power supply connections before the system circuits are initialized.

[Page 1, Paragraph 7 and 8].

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14. Claim 5 rejected under 35 U.S.C. 103(a) as being unpatentable over James W. Allen (US Pat 6,505,105) in view of Roohpavar (US Patent Application Pub No. 2003/0225959) as applied to claim 4 above, and further in view of Mattison (US Pat 6,363,463 B1)

15. Allen in view of Roohpavar teaches an electronic unit that contains a volatile and nonvolatile memory for calibration of data to control a subsystem with the use of a control register to hold address and data information.

However, the device of Allen in view of Roohpavar does not specifically disclose the use of an authority register to control use of a control register containing the calibrated data and address information of the data.

Mattison discloses the use of a memory access enable register (112) that contains a single bit that allows access or denies access to memory. **[Fig 2; Column 6, lines 55 – 64].**

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a memory access enable register in Allen's device in view of Roohpavar, because Mattison shows there is a need for a protection scheme to modify flash memory in the art. **[Column 2, lines 50 – 53]**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D. Birkhimer whose telephone number is 571-270-1178. The examiner can normally be reached on M - H 7:30 till 5:00, F 7:30 till 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sue Purvis can be reached on 571-272-1236. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher D Birkhimer
Examiner
Art Unit 2198

September 13, 2006


SUE A. PURVIS
SUPERVISORY PATENT EXAMINER

